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# NCPTT NOTES

National Center for Preservation Technology and Training

UNITED STATES DEPARTMENT OF THE INTERIOR • NATIONAL PARK SERVICE

FALL SUPPLEMENT 1997

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## Preservation Technology and Training Grants: 1994-1997 in review

> "**...in order to ensure** an effective and efficient system of research, information distribution and skills training in all the related historic preservation fields."
>
> — From *National Historic Preservation Act Amendments of 1992*, citing the goals of the PTTGrants program

On behalf of the National Park Service and the Preservation Technology and Training Board, the National Center for Preservation Technology and Training is pleased to present the third annual summary of NCPTT's Preservation Technology and Training Grants.

The PTTGrants program began with the initial operations of NCPTT in 1994, and expansion of the PTTGrants program has paralleled NCPTT's development.

In 1994 and 1995, PTTGrants were awarded for projects in research and training. In 1996, information management was added as a PTTGrants category.

In 1997, the PTTGrants program grew to include topics pertinent to NCPTT's Materials Research Program. Also in 1997, the PTTGrants categories were reconfigured to eight project types — in response to the preservation and conservation community's needs represented by applications received, and towards more flexible management of the PTTGrants program. Project types now include 1) information management, 2) education and training, 3) applied and fundamental research, 4) environmental effects of outdoor pollutants on cultural resources, 5) technology transfer, 6) analytical facility support, 7) conference support, and 8) publications support.

Approximately 200 applications for project funding were received in the 1997 Fall and Spring Calls for Proposals, for a total of approximately $5,361,000 requested. $635,137 of NCPTT funds was awarded for 25 PTTGrants projects in 1997, matched with approximately $529,000 of funds, services and materials secured by PTTGrants applicants.

The 1997 awards and national, disciplinary and organizational distribution of the 1997 PTTGrants program are detailed in this edition of *Notes*. As in the Fall Supplement 1995 and the Summer Supplement 1996 of *Notes*, status and results of 1994, 1995 and 1996 PTTGrants also are summarized.

PTTGrants support an important and growing body of work and a network of preservation and conservation partnerships that extends throughout the United States at all levels of practice — evidence of the benefits reaped for the preservation and conservation community by open and generous collaboration.

**—Katherine H. Stevenson**
Associate Director, Cultural Resource Stewardship and Partnerships

**—Dr. Elizabeth A. Lyon**
Chair, Preservation Technology and Training Board

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Executive Director, NCPTT

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**NCPTT NOTES**
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**1997**

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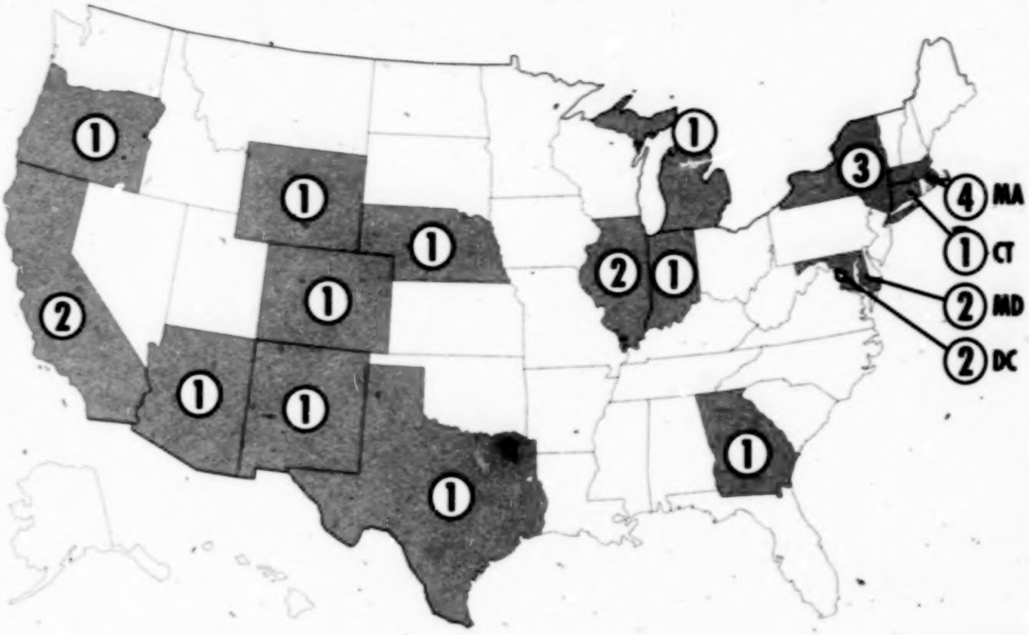
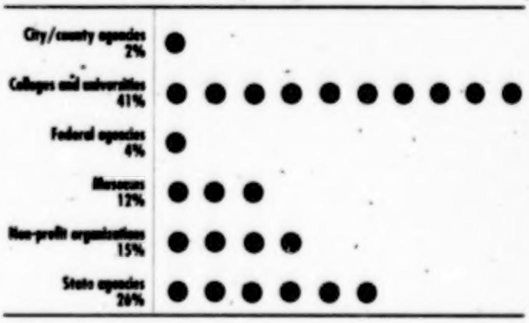
Comments and items of interest for the next newsletter should be sent to the editor of the upcoming *NCPTT Notes*, Mark Gilberg.

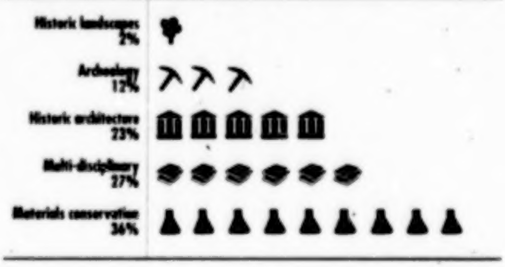
# National Distribution of 1997 PTTGrants



## 1997 PTTGrants by organization



## 1997 PTTGrants by discipline



## 1998 Preservation Technology and Training Grants: Fall Call for Proposals

NCPTT welcomes proposals for the 1998 Preservation Technology and Training Grants program from our preservation and conservation colleagues. Information about the 1998 PTTGrants programs now is available.

A Fall Call for Proposals brochure has been mailed to *NCPTT Notes* subscribers. Information in the brochure also is available from NCPTT's fax-on-demand computer (telephone 318/357-3214 and follow recorded instructions), NCPTT's World Wide Web site, and via return e-mail (send a blank message to <pttgrants@alpha.nsula.edu>).

The 1998 PTTGrants program has eight application categories: 1) information management, 2) education and training, 3) applied and fundamental research, 4) environmental effects of outdoor pollutants on cultural resources, 5) technology transfer, 6) analytical facility support, 7) conference support, and 8) publications support.

Applicants should review the 1998 PTTGrants Fall Call for Proposals information and PTTGrants awards summarized in this edition of *Notes* prior to contacting NCPTT to discuss applications.

1998 PTTGrants will be awarded subject to availability of funds.

# 1997 Preservation Technology and Training Grants

## Information Management

*These 1997 PTTGrants projects are administered by Mary Carroll, NCPTT Information Management Coordinator.*

### 1. Advancing SHPO Geographic Information Systems in the Western United States

New Mexico State Historic Preservation Office, Santa Fe, New Mexico; Wyoming State Historic Preservation Office, Cheyenne, Wyoming

$36,243

**Project abstract:** The SHPOffices of New Mexico and Wyoming plan to implement a common cultural resource database design. This collaboration will develop a common spatial data structure and implement a prototype Geographic Information System based on the ESRI Spatial Database Engine and other supporting ESRI technologies. The project will build on existing models and systems in both states to arrive at a common solution. Input will be solicited from other western SHPOffices and the model will be offered to Federal agencies for review. With the help of ESRI technical personnel, the prototype will be implemented in New Mexico.

**Project significance:** SHPOffice information systems must support everyday cultural resource management decisions. The ability to query and analyze cultural resources using geographic location is basic to SHPOffice information systems. GIS probably has been on almost every SHPOfficer's list of things to do for the past decade, yet examples of truly integrated GIS implementations in SHPOffices are rare.

GIS has the potential to fundamentally change many SHPOffice operations. With spatial data at their finger tips, cultural resource managers may be able to shift their attention from resolving conflicts on an ad hoc basis, to long-range planning and conflict avoidance. Successful GIS implementations must help solve basic information systems functions relating to data collection, quality assurance, and data delivery, or the added expense of GIS will be difficult to justify. From this perspective, the Spatial Database Engine represents breakthrough technology and an appropriate foundation for implementing GIS among SHPOffices in the western United States.

### 2. Digitization of Primary Documents Pertaining to the Archeological Collections from California and Nevada in the Phoebe Hearst Museum of Anthropology

Phoebe Hearst Museum of Anthropology, University of California, Berkeley, California

$23,001

**Project abstract:** The Phoebe Hearst Museum of Anthropology will digitize irreplaceable primary documents pertaining to archeological materials from California and Nevada in the museum's collections. The documents constitute the research context that makes the museum's object collections continue to be useful for restudy and as background for new research. Inventoried and publicized since 1990, the collections experience heavy use. Information from the manuscripts has been used in academic publications, dissertation research, cultural resource management reports, and government reports. The proposed project will safeguard original documents, and enable greatly improved access to researchers.

**Project significance:** Digitization of archeological archives will enable multiple user access at networked locations within the museum. The collection will be preserved, continued and improved access to the materials by researchers will be guaranteed, and the collection will be better integrated into museum research and collections management efforts.

### 3. Michigan Sites On-Line

Michigan State Historic Preservation Office, Lansing, Michigan

$32,977

**Project abstract:** This project will upgrade existing electronic records to include descriptions, significance statements and photo images for 3,000 Michigan registered historic sites and make the completed records available to the public via on-site terminal and the Internet World Wide Web. Access to complete site information and photo images will increase communities' knowledge of their historic resources and encourage preservation. This project will add record substance — images and narrative — now available only in difficult-to-access paper and slide files, and make records widely accessible via Internet.

**Project significance:** By making complete site information and images easily accessible, searchable and manipulable, the project will enable officials and professionals to consider their communities' historic resources when planning and decision-making. Linking site information to museum and archival information will allow more traditional researchers to consider buildings, structures and landscapes as part of the documentation of Michigan's history.

## Training and Education

*These 1997 PTTGrants projects are administered by Frances Gale, NCPTT Training Coordinator.*

### 4. Lead Paint and Historic Preservation

Illinois Historic Preservation Agency, Springfield, Illinois

$40,000

**Project abstract:** Lead paint presents a challenge to virtually every historic building owner. This project will develop model training and a workbook on lead-safe rehabilitation practices. The workbook will serve two different audiences: for architects, owners and preservationists, the training will clarify applicable regulations, and outline lead-safe techniques and specification writing; for construction and maintenance workers, the training will emphasize retaining historic fabric by making buildings lead-safe rather than lead-free.

**Project significance:** Lead-based paint abatement procedures that focus on making building lead-free are often costly and pose a significant threat to historic resources. Lead-safe techniques have been developed that minimize worker exposure to the environmental hazards of lead paint while retaining historic fabric. Training for preservation professionals in making buildings lead-safe is essential to the viability of historic buildings and preservation.

### 5. Living with the Past: Preserving Community Resources

Oregon State Historic Preservation Office, Salem, Oregon

$23,640

**Project abstract:** This project will produce a video to educate local decision-makers about applying The Secretary of the Interior's Standards for the Treatment of Historic Properties to historic districts. The video will focus not on individual buildings, but on context issues and groupings of "background" properties — the classification category for a significant percentage of historic district properties. Because examples through which the Standards are interpreted will be chosen for their national applicability, the resulting video will provide a highly useful training tool for local decision-makers across the nation.

**Project significance:** The concept of an historic district is not always compatible with current urban planning and development practices, which tend to apply zoning standards to individual properties without regard to context. Consequently, decisions made by planners and developers can diminish the integrity and value of historic districts. The video produced by this project will help to educate decision makers by interpreting the Secretary's Standards in the context of historic districts.

### 6. Preservation TrainNet: On-Line Training for Local Governments

Center for Graduate and Continuing Studies, Goucher College, Towson, Maryland

$38,350

**Project abstract:** Preservation TrainNet will develop a distance learning training program designed to educate local government officials and members of preservation and design review commissions about historic preservation. TrainNet will use the Internet to deliver training that will include the philosophy and benefits of historic preservation and identifying, evaluating and designating historic properties.

**Project significance:** The viability of historic preservation nationwide depends on the dissemination of technical assistance and information about programs, incentives and initiatives. TrainNet will provide training for people in local governments — a large audience for whom training in preservation is critical. The application of on-line distance learning technology to preservation training will ensure that this training is widely accessible.

### 7. Techniques for Restoring and Conserving Three-Dimensional and Stained Glass Objects

Gerald R. Ford Conservation Center, Nebraska State Historical Society, Omaha, Nebraska

$17,563

**Project abstract:** The Nebraska State Historical Society's Division of Conservation will collaborate with the Nebraska State Historic Preservation Office in offering a five-day seminar on restoring and conserving three-dimensional and stained glass objects at the Gerald R. Ford Conservation Center. Designed chiefly for practicing objects conservators, stained glass professionals, and preservationists, seminar topics will include current cleaning, repair and restoration techniques.

**Project significance:** This seminar will address the national need for continuing education for objects conservators, stained glass professionals and preservation professionals. Often, practicing conservators lack sufficient opportunity for training in current conservation strategies. The seminar location will be convenient for conservators in the Midwest, providing training for an underserved portion of the preservation and conservation community.

1997 PTTGrants

## Applied/Fundamental Research

*These 1997 PTTGrants projects are administered by Dr. Mark Gilberg, NCPTT Research Coordinator.*

### 8. Museum Lighting Protocol

Lighting Research Center, Rensselaer Polytechnic Institute, Troy, New York

$35,359

**Project abstract:** Rensselaer Polytechnic Institute will explore the use of optical filters in combination with conventional halogen light sources to reduce degradation rates for illuminated museum exhibits to the lowest practical level while providing a satisfactory appearance for the exhibit. Relative irradiances that provide equivalent assessments of exhibit appearance will be determined for conventional museum lighting and for a tri-band source produced by combining and balancing the outputs of halogen lamps fitted with narrow band-pass filters.

**Project significance:** Exposure to artificial light is an important factor in the deterioration of many museum objects on exhibit. Reducing light levels to reduce deterioration however may lead to an unsatisfactory exhibit. Recent research suggests that by concentrating incident light into certain spectral bands degradation rates for illuminated museum exhibits may be minimized without compromising viewer satisfaction.

### 9. Nondestructive Method for Evaluating the Hardness of Pointing Mortars

Rocky Mountain Masonry Institute, Denver, Colorado

$39,765

**Project abstract:** Rocky Mountain Masonry Institute will develop a simple, nondestructive method for evaluating in-situ the surface hardness of historic pointing mortars. A low energy pendulum-type rebound hammer, manufactured by Proceq in Switzerland, will be modified to allow testing of different joint types and thicknesses. Laboratory tests will be correlated with field trials conducted on historic masonry structures where mortar proportions and properties have been determined by previous chemical and petrographic analysis."

**Project significance:** Currently, there is no standard test method for categorizing pointing mortars based upon measured hardness. Petrographic and chemical analyses of samples have been used to characterize mortars but the process requires sophisticated analytical equipment and is expensive and thus often performed on a limited basis. There is a distinct need for a simple, nondestructive method that would permit the evaluation of mortar properties such as hardness, and also the distribution of these properties throughout a building. Development of this technique will permit rapid, low cost, in-situ determination of mortar hardness before and after repair.

### 10. Nondestructive Methods for the Structural Evaluation of Wood Floor Systems in Historic Buildings

Wood Research Laboratory, Department of Forestry and Natural Resources, Purdue University, West Lafayette, Indiana

$40,000

**Project abstract:** Nondestructive techniques for evaluating the structural integrity of wood floor systems in historic buildings will be investigated, with an emphasis on the development of test procedures for assessing in-place floor systems. Dynamic test methods that include transverse vibration, ultrasonic and stress wave transmission techniques will be evaluated in an effort to assess and predict the residual performance of load bearing wood floors.

**Project significance:** To date, there is no standard method for evaluating the structural integrity of wood floor systems using nondestructive techniques. Current methods of examination and assessment are often subjective and therefore tend to yield imprecise or variable results. For this reason, estimates of allowable wood floor loads are often conservative. The assignment of conservatively low, allowable floor loads often means that the continued use, or adaptive use, of an historic building is uneconomic resulting in demolition or inappropriate rehabilitation. Successful completion of this project will enable inspectors to nondestructively assess the load-carrying capacity of floor systems and thus assign safe, appropriate floor load levels without needlessly compromising historic fabric.

## Environmental Effects

1997 PTTGrants

*These 1997 PTTGrants projects are administered by Dr. Mary Striegel, NCPTT Materials Research Program Manager.*

### 11. Research into Protective Coating Systems for Outdoor Bronze Sculpture and Ornamentation (Phase 2 of a multi-year project)

Scientific Research Department, National Gallery of Art, Washington, DC

$50,000

**Project abstract:** This research addresses the pressing need for new coating strategies to protect outdoor bronzes from the effects of polluted environments. Hypotheses developed in previous NCPTT-funded research will be tested by studying selected coatings on an expanded range of substrates. The focus will be on the role of adhesion and correlation of accelerated and natural outdoor weathering for a reliable prediction of coating performance. Characterization of chemical and physical properties of metal/coating interfaces by material science methods is expected to significantly improve our understanding of coating behavior on outdoor bronzes. The research is expected to produce new conservation treatment options.

**Project significance:** There is consistent need for long-term effective protective coatings to preserve outdoor bronze sculpture from the damaging effects of polluted urban environments. With a fundamental understanding of coatings mechanism and their suitability in certain environments; preservation professionals will have a wider range of conservation treatments from which to choose towards reducing corrosion on metal sculptures and ornamentation.

### 12. The Role of Microorganisms in the Deterioration by Atmospheric Pollutants of Stone Used in Historic Buildings and Monuments

Division of Engineering and Applied Sciences, Harvard University, Cambridge, Massachusetts

$48,631

**Project abstract:** Microorganisms have been implicated in the degradation of stone by pollutants. However, neither the mechanisms of action nor the importance of microbial processes in pollutant damage have been elucidated. This project will investigate the role of indigenous bacteria and fungi in the deterioration of limestone contaminated with sulfur dioxide, nitrogen oxides and hydrocarbons. The research will be carried out in cooperation with NCPTT and will utilize NCPTT laboratory facilities. The study will include tests of artificial polymers and biocides as a means of controlling biologically mediated deterioration.

**Project significance:** Biological causes of stone deterioration may be a critical component of cultural resources decay, particularly in tropical and subtropical environments. While preservation and conservation studies have been on-going in the area of biological decay, few researchers have looked at the effects of air pollution on microorganisms. This study will enhance our understanding of the role of microorganisms and their interaction with pollutants in the process of stone deterioration. By better understanding this process we can develop more effective remedial treatments to preserve historic monuments and buildings exposed to air pollutants.

## Technology Transfer

1997 PTTGrants

### 13. Coordinate Measurement of Ships and Smallcraft: A Cooperative Project

Mystic Seaport Museum, Inc., Mystic, Connecticut

$15,000

**Project abstract:** This project will develop a system to measure and draw large and small watercraft in three dimensions using a surveyor's total station and advanced surface modeling software. With this system, the measurement of complicated curvilinear objects can be reduced from weeks to hours. The system will be used by Mystic Seaport Museum, Inc., Historic American Buildings Survey/Historic American Engineering Record and South Street Seaport Museum in their on-going documentation projects, and will be loaned to other institutions with similar projects.

**Project significance:** Creating technical drawings of large and complex curvilinear objects is expensive and time consuming, and resources for documenting and preserving historic watercraft often are minimal. Traditional two-dimensional drawings are not readily understood by the general public, and are not always useful as interpretive tools for historic resources. The surveyor's total station and state-of-the-art software allows for creating three-dimensional views of maritime resources and increasing the speed and accuracy of documentation.

*This project is administered by Frances Gale, NCPTT Training Coordinator.*

### 14. Development of Non-Linear Documentation Strategies for Incorporating Computerized Solid Modeling in Historic Building Surveys

College of Architecture, Texas A&M University, College Station, Texas

$15,000

**Project abstract:** Texas A&M University will investigate the use of three-dimensional computer modeling techniques as an alternative to conventional linear, two-dimensional drawings for documenting historic structures. New survey methodologies will be developed that can yield data compatible with existing commercial, solid modeling software. Survey methodologies will be evaluated using three historic structures of increasing scale and complexity as test sites.

**Project significance:** The use of solid models as a tool for documenting historic architecture has great potential. Solid modeling is widely employed by engineering disciplines but has found only limited application in historic preservation because of high costs associated with the purchase of the necessary computer hardware and software. Though these costs have been significantly reduced in recent years, solid modeling remains little used in preservation in the absence of survey methodologies that utilize existing solid modeling software. Developing these strategies will greatly facilitate the evaluation and potential application of solid models as a documentation tool.

*This project is administered by Mary Carroll, NCPTT Information Management Coordinator.*

### 15. Digital Image Enhancements and Compositing of Plan View Geophysical Data Sets

Center for Remote Sensing, Department of Archaeology, Boston University, Boston, Massachusetts

$11,499

**Project abstract:** Boston University will explore the use of various computer processing and imaging techniques for the analysis of data collected from a single archeological site using three complementary remote sensing methods. Densely sampled geophysical data collected from magnetometry, resistivity and conductivity measurements will be combined through multi-variate statistical analysis and GIS-based color compositing to increase the potential for discovering patterns or cultural features in the subsurface record. Following these experimental trials, the benefits of generating two-dimensional plan views of computer-enhanced, geophysical data sets of archeological features will be determined.

**Project significance:** This study will demonstrate the potential of using multiple remote sensing methods when collecting data from a single site and, in particular, the benefit of using various computer processing and imaging techniques to generate superior, two-dimensional plan views of subsurface archeological features from densely sampled, geophysical prospection data.

*This project is administered by Dr. Mark Gilberg, NCPTT Research Coordinator.*

### 16. Digital Videographic Imaging: Digital Recording, Preservation and Dissemination of Archeological Data

Anne Arundel County Trust for Preservation, Inc., Annapolis, Maryland

$15,000

**Project abstract:** The Lost Towns of Anne Arundel project proposes acquisition and use of digital videographic equipment and three-dimensional reference grids, coupled with computer image capture and processing technologies, to record, preserve, analyze and disseminate high quality archeological data recovered from two colonial town sites in Maryland: Providence (1649-1680) and London (1683-1783). Resulting digital images will be incorporated into a database for three-dimensional modeling and analysis and will be used as images in museum exhibits. Professional digital equipment also will allow archeological research to be captured as broadcast quality images for dissemination to a broader audience.

**Project significance:** New, affordable digital recording technologies hold great promise in archeological research through analysis, data preservation, and distribution of information. This study will transfer the latest digital video technology to the archeological field for use in recording and analyzing highly stratified deposits and subsurface features at archeological sites and provide high quality images necessary for post-excavation analyses and public outreach.

*This project is administered by Dr. Mary Striegel, NCPTT Materials Research Program Manager.*

### 17. Subsurface Acoustical Imaging Technology: Ground Penetrating Sonar

Scripps Institution of Oceanography, San Diego, California

$14,901

**Project abstract:** Scripps Institution of Oceanography will develop and test an improved technology for geophysical prospecting using sound waves. The project will develop an acoustic transmitting and receiving transducer that can rapidly collect data along the ground surface in a manner analogous to ground penetrating radar. Field trials will be conducted at a site with known cultural resources previously mapped using ground penetrating radar. The use of acoustic and radar imaging technologies for the identification of buried cultural resources will be compared and evaluated in light of field trial results.

**Project significance:** Geophysical remote sensing methods are widely used in archeology to detect and identify subsurface cultural resources. These methods allow rapid, nondestructive assessment of archeological sites and facilitate the excavation process by allowing sampling strategies based on prior knowledge of site structure and geology. Although acoustical imaging has been demonstrated to be useful for detecting buried archeological features, it has not achieved the ease of application of other remote sensing methods such as ground penetrating radar. If this study is successful, acoustical imaging will be another tool for more rapid and efficient detection of buried cultural resources.

*This project is administered by Dr. Mark Gilberg, NCPTT Research Coordinator.*

## Analytical Facility Support

### 18. Enhanced Analytical Services

Williamstown Art Conservation Center, Williamstown, Massachusetts

$49,942

**Project abstract:** Williamstown Art Conservation Center will receive NCPTT support for providing analytical services that are otherwise not commonly available on a regional or national basis to the preservation and conservation community. Funding is provided for the acquisition and up-grade of scientific instrumentation, particularly light microscopy and FT-IR microscopy, and for the purchase of essential materials and supplies for operating analytical equipment.

**Project significance:** Light microscopy and FT-IR microscopy are two of the most widely used techniques for the technical analysis of works of art, and are the principal techniques used for the visual examination of layered samples and the identification of organic and inorganic materials found in pigments, fibers, dyes, binders and coatings. Technical data are fundamental to investigating materials, implementing informed conservation treatments, authenticating and dating museum objects, and selecting appropriate materials for use in exhibition and storage. Few conservation centers or conservators, however, are technically capable of undertaking such analyses. This PTTGrants award will enhance the Williamstown Art Conservation Center's ability to provide timely and reliable chemical analysis at competitive rates to the preservation and conservation community.

*This project is administered by Dr. Mark Gilberg, NCPTT Research Coordinator.*

1997 PTTGrants

# Conference Support

## 19. Care and Preservation of Historic Vehicles

The Museums at Stony Brook, Stony Brook, New York

$12,591

**Project abstract:** The Museums at Stony Brook will conduct a two-day symposium on the care, preservation and conservation of historic horse-drawn vehicles. The symposium will be offered to carriage collectors and to museum and historical society professionals who have vehicles in their collections but who are unfamiliar with current standards of conservation and care for such large, complex artifacts.

**Project significance:** Objects care and maintenance training is essential for collectors and museum professionals. This conference will provide training in the care and preservation of historic vehicles and will disseminate professional standards to a broad audience. Not only will workshop attendees learn specifically about historic vehicles, but they will also be introduced to professional conservation standards, resource organizations and professional conservators.

*This project is administered by Frances Gale, NCPTT Training Coordinator.*

## 20. The Conservation and Preservation of Tabby: A Symposium on an Historic Building Material in the Coastal Southeast

Georgia State Historic Preservation Office, Atlanta, Georgia

$10,580

**Project abstract:** Tabby is an historic building material comprised of shell, lime, and sand that can be found in the coastal areas of Georgia, South Carolina, and Florida. Tabby resources are gradually deteriorating, and little is known about the long-term effects of various conservation techniques. A symposium is proposed to convene approximately twenty scholars, craftsmen, archeologists, architects, and other preservation and conservation professionals to discuss current scholarship in the field of tabby and to determine what is needed to develop an appropriate plan of action for these fragile resources. Proceedings will be published in print and via Internet.

**Project significance:** The lack of research on tabby results in a dearth of effective, scientifically-based preservation treatments. The symposium will generate new research ideas by bringing together scientists, conservators, historical architects, historians and others to observe deteriorating tabby resources and to discuss potential causes of decay. The symposium will stimulate new interdisciplinary research that can lead to more effective conservation treatments and longer lifetimes for endangered tabby structures.

*This project is administered by Dr. Mary Striegel, NCPTT Materials Research Program Manager.*

## 21. Teaching with Historic Places: Setting a Course for the Future

National Register of Historic Places, National Park Service, Washington, DC

$11,460

**Project abstract:** The Teaching with Historic Places program will convene a panel of teachers, curriculum specialists, historians and preservation professionals to review the program's first five years and set the direction for its future. In addition to reviewing the current status of Teaching with Historic Places, the panel will develop strategies for reaching new audiences and discuss the use of advanced educational technologies.

**Project significance:** Using historic places to teach history and allied subjects requires continued development of curriculum materials. The Teaching with Historic Places conference will enable educators and preservationists to address strategies for program evaluation, funding and expansion. Findings and recommendations derived from this conference will assist in improving the Teaching with Historic Places program and provide methodologies for heritage education program developers nationwide.

*This project is administered by Frances Gale, NCPTT Training Coordinator.*

1997 PTTGrants

# Publications Support

## 22. The Conservation of Historic Brick Structures

Conservation Center, Institute of Fine Arts, New York University, New York, New York

$15,000

**Project abstract:** This project will contribute to the preparation of a monograph on the conservation of historic brick structures. Book chapters will include revised and edited papers presented at Experts Meetings held under the NATO-CCMS Pilot Study on the same topic, additional papers presenting new results, and an overview chapter providing a review of the state of research and suggesting promising new research opportunities. The resulting volume will be a comprehensive research overview of an important area of architectural conservation.

**Project significance:** Unlike the vast literature on the conservation of historic stone monuments, there is a relatively small amount of published material on the preservation of historic brick structures. This project will bring together much of the most recent scholarship on brick preservation from many countries in one publication, and thus greatly enhance our understanding and knowledge of brick preservation.

*This project is administered by Dr. Mary Striegel, NCPTT Materials Research Program Manager.*

## 23. Review of US Policy for Protecting Submerged Cultural Resources beyond the Three-Mile Limit

Department of Archaeology, Boston University, Boston, Massachusetts

$14,935

**Project abstract:** Current US law on the protection of submerged cultural resources located beyond the three-mile limit will be reviewed. The legal and philosophical differences between US policy and various international conventions which provide protection to submerged cultural resources beyond territorial waters will be discussed in light of the prospect of developing a more comprehensive national policy that extends US jurisdiction over submerged cultural resources beyond the current three-mile limit.

**Project significance:** US policy on the protection of submerged cultural resources beyond the territorial seas is complex and often confusing because of the many legislative, jurisdictional and historical issues involved. Most preservationists are poorly informed about these issues especially jurisdictional issues and matters of international law. Meanwhile, underwater cultural resources are increasingly threatened by continued improvements in exploratory and recovery technologies. As a result, many significant resources have been damaged or lost altogether. A review of existing US policy will serve to inform and stimulate interest in this important topic, towards promoting the development of a more comprehensive and consistent policy on the protection of underwater cultural heritage.

*This project is administered by Mary Carroll, NCPTT Information Management Coordinator.*

### 24. A Review of Rock Art Conservation: Theory and Practice

American Rock Art Research Association, Tucson, Arizona

$8,700

**Project abstract:** The American Rock Art Research Association will review the theory and practice of rock art conservation in the United States and worldwide. Among topics to be addressed will be condition assessments, treatment methodologies, management practices, and the training of conservators in the care and preservation of rock art. A monograph synthesizing the existing rock art conservation literature, including a bibliography of selected key texts, will be prepared.

**Project significance:** While much has been written on the care and preservation of rock art, the bulk of the published literature is scattered throughout foreign journals and magazines as well as obscure, non-professional publications. Few attempts have been made to collate and synthesize this material into a single, coherent document that gives a more focused account of the current state of rock art conservation. This review will greatly facilitate the practice of rock art conservation while at the same time draw attention to the extent and significance of this cultural resource and threats faced from visitors, vandalism and management practices. The project also will help to establish priorities for future research activities involving rock art conservation in the US.

*This project is administered by Mary Carroll, NCPTT Information Management Coordinator.*

### 25. A Review of Recent Advances in GIS Applications for Archeology

Argonne National Laboratory, Argonne, Illinois

$15,000

**Project abstract:** This project will undertake a comprehensive overview of the existing literature on GIS in archeology from both research and management perspectives. GIS technology has been available for several decades; recent advances in computer technology have made GIS less costly and more "user friendly". Although archeologists began using this tool in the 1980s, GIS applications in archeology did not become widespread until the 1990s. Publications on GIS in archeology have focused on research, and comparatively little has been published on GIS as a planning and management tool for cultural resources.

**Project significance:** The proposed review of GIS applications in archeology will be of considerable benefit to the archeological and preservation community. The review will assemble current information regarding technological advances in GIS and archeology from widely scattered sources. The advancement of this state-of-the-art technology should prove to be of significant consequence to the preservation and conservation of cultural resources as progress is made towards improved data collection and record keeping, complex inter- and intra-site analyses, advanced methods for site identification through predictive modeling, and the development of sophisticated approaches to cultural resource impact assessment.

*This project is administered by Mary Carroll, NCPTT Information Management Coordinator.*

# 1996 Preservation Technology and Training Grants

1996 PTTGrants

## Training and Education

*These 1996 PTTGrants projects are administered by Frances Gale, NCPTT Training Coordinator.*

### 26. Historic Preservation Workshop for Planning and Preservation Commissioners

Office of Preservation Services, School of Environmental Design, University of Georgia, Athens, Georgia

$28,270

The University of Georgia's Office of Preservation Services and the National Alliance of Preservation Commissions has developed a model Historic Preservation Short Course for local historic preservation and planning commissions. The curriculum focuses on developing goals and objectives for protecting character in a neighborhood setting and applicable legal, economic, design tools. Participants will learn how to integrate historic preservation and planning approaches to achieve balanced and optimal solutions. Co-sponsored by the American Planning Association's Louisiana Chapter, the workshop is scheduled for September 1997, in Lafayette, Louisiana.

### 27. Hazards in Conservation Materials and Processes: Workshop and Technical Field Guide

RESTORE, New York, New York

$40,000

RESTORE, a national provider of architectural training programs, presented a workshop on environmental hazards related to restoration materials and processes. The workshop was held in May 1997, at the Arsenal in New Orleans. Designed for preservation architects, museum conservators, cultural resource managers and facilities maintenance personnel, the workshop provided instruction on recognizing hazardous materials and safe work practices.

A technical field guide will be produced and distributed nationwide.

### 28. Preserving Mechanical Systems: CD-ROM Correspondence Course

Belmont Technical College, St. Clairsville, Ohio

$37,920

Belmont Technical College is developing a correspondence course on the preservation of electrical, plumbing, heating and air conditioning systems.

This project will produce computer-based interactive training on CD-ROM for preservation professionals and the general public.

### 29. Building Code Issues in Rehabilitation: Solutions and Precedents

California Preservation Foundation, Oakland, California

$38,178

California Preservation Foundation is compiling case studies that illustrate alternative building regulations and standards to facilitate restoration and adaptive re-use of historic buildings, for dissemination via the Internet. Following their survey of California legislation, CPF will develop a database for accessing these materials.

### 30. Cultural Resources Protection: Training for Northern Nevada Tribes

Washoe Tribe of Nevada and California, Gardnerville, Nevada

$40,000

This project will provide training for the Washoe Tribe of Nevada and California on key issues pertaining to the protection and preservation of their cultural heritage. The Washoe Tribe currently is identifying appropriate training providers in osteology, paraprofessional archeological training, and Section 106 of the National Historic Preservation Act.

### 31. Restoring Dry-Stone Walls and Fences: An Instructional Video

Kentucky Heritage Council, Frankfort, Kentucky

$24,082

Kentucky Heritage Council, the Dry-Stone Masonry Institute and KET, the Kentucky Network, produced an instructional video on preserving drystone walls and rock fences. *Walls of Stone* provides graphic instruction on repairing, rebuilding and relocating stone walls and rock fences. In addition to providing training to practitioners, the video explains fence and wall construction to archeologists, engineers, preservationists and conservators. Copies are available through Dry-Stone Masonry Institute, 606/272-4807.

[NCPTT Publications No. 96-01]

### 32. Historic Landscapes Workshops

The Alliance for Historic Landscape Preservation, New York, New York

$37,100

The Alliance for Historic Landscape Preservation sponsored three historic landscapes workshops designed for state historic preservation offices, statewide preservation organizations, local preservation commissions, and others involved in the evaluation, registration and treatment of historic landscapes. Workshops were held April 1997, in Memphis; May 1997, in Omaha; and June 1997, in Salt Lake City.

## 1996 PTTGrants

## Research

*These 1996 PTTGrants projects are administered by Dr. Mark Gilberg, NCPTT Research Coordinator.*

### 33. Using Three-Dimensional Ground Penetrating Radar to Locate and Identify Buried Archeological Features

Department of Anthropology, University of Colorado, Boulder, Colorado

$39,860

Project in progress; anticipated completion Fall 1997.

### 34. Developing Comprehensive Testing Protocols for Protective Coatings for Silver Objects in Museum Collections

Corrosion and Materials Research Institute, Newark, Delaware

$39,844

Project in progress; anticipated completion Fall 1997.

### 35. A New Technique for Accurately Dating Prehistoric Rock Paintings

Department of Chemistry, Texas A&M University, College Station, Texas

$39,954

Project in progress; anticipated completion Fall 1997; project results published to date —

Armitage, R.A., M. Hyman, J. Southon, and M.W. Rowe. "Rock art image in Fern Cave, Lava Beds National Monument, California: not the A.D. 1054 (Crab Nebula) supernova". *Antiquity* (submitted for publication).

——, and C. Barat. "Fern cave rock paintings at Lava Beds National Monument, California: Not the 1054 A.D. supernova" in *Proceedings of the Oxford V Conference* (in press).

Hyman, M., and M.W. Rowe. "Plasma extraction and AMS 14C dating of rock paintings". *Techne* (in press).

### 36. Developing Models for Parking and Pedestrian Circulation Design in Historic Downtowns

Department of Horticulture and Landscape Architecture, University of Kentucky, Lexington, Kentucky

$14,301

Project in progress; anticipated completion Fall 1997.

### 37. Developing a Prototypical Historic Fire Risk Index to Evaluate Fire Safety in Historic Buildings

Fire Safety Institute, Middlebury, Vermont

$38,496

Project completed; final report under review; project results published to date —

Watts, J.M. "Analysis of the NFPA fire safety evaluation system for business occupancies". *Fire Technology* 33 (1997).

——, and M.E. Kaplan. "Fire risk index for historic buildings", paper presented to NFPA Technical Committee on the Protection of Cultural Resources, Oyster Bay, New York, May 1997.

——. "One approach to creating a performance code for historic buildings: The Historic Fire Risk Index", Annual Meeting of the Association of Preservation Technology International, Chicago, Illinois, September 1997.

——. "Performance based approaches to protecting our heritage", paper presented at International Conference on Performance Based Codes and Fire Safety Design Methods, September 24-26, 1996, Ottawa, Ontario, Canada.

### 38. Developing Standards and Procedures for Recording Courthouses Using Customized Digital Technologies: A Model for Statewide County Courthouse Digital Documentation

Department of Architecture, University of Texas-San Antonio, San Antonio, Texas

$39,754

Project in progress; anticipated completion Summer 1998.

### 39. Using Aerial Photography to Document and Monitor the Condition of Prehistoric Earthen Structures

Society for American Archaeology, Washington, DC

$40,000

Project in progress; anticipated completion Fall 1997.

1996 PTTGrants

## Information Management

*These 1996 PTTGrants projects are administered by Mary Carroll, NCPTT Information Management Coordinator.*

### 40. Maritime Cultural Resources: Developing and Sharing an Expandable On-line Database

Ohio State Historic Preservation Office, Columbus, Ohio

$40,000

The prototype database is completed and operational. The first draft of the procedural manual is in revision. Anticipated completion Fall 1997.

### 41. Providing Public Access to Hawai'i's Preservation Information via World Wide Web

Hawaii State Historic Preservation Division, Honolulu, Hawaii

$9,500

Work completed to date includes researching the indexing and database software available in the public domain, analyzing data sets to determine which information system is the most applicable, translating sample data sets and testing the database, and providing an html interface for the World Wide Web. Anticipated completion Fall 1997.

### 42. A Creole Heritage Preservation Guide

St. Augustine Historical Society, Natchitoches, Louisiana

$30,040

The survey has been sent to institutions with Creole collections and the general Creole public; responses are being compiled. Anticipated completion Fall 1997.

### 43. Computerizing Maryland's Historic Site Records

Maryland Historical Trust, Crownsville, Maryland

$39,820

Equipment and software necessary for the project have been acquired and installed. Final format of the "form on disk" will be decided in Summer 1997. Database design is completed and data entry is ongoing. Anticipated completion December 1997.

### 44. UVa Law Library Collection: Developing an Internet Database for Preservation Law

University of Virginia Law School Foundation, Charlottesville, Virginia

$27,937

Project in progress; anticipated completion Fall 1997.

### 45. Arizona's Cultural Resource Database: Developing a Master Plan

Arizona State Museum, Tucson, Arizona

$34,547

The AZSite Consortium Workshop took place in Phoenix, Arizona in February 1997, with approximately 100 participants. Issues discussed included appropriate database content, sources of data, security, tribal concerns, sensitive information, future funding sources, long-term management, access protocols, and user fees. Project staff will complete the plan for the statewide database. Anticipated completion Fall 1997.

### 46. Internet Access to State-by-State Preservation Law

National Council of State Historic Preservation Officers, Washington, DC

$40,000

Design of the database is completed. Entries have been completed for all states and territories and sent to each for final review. Protocols have been developed for the on-line database. Anticipated completion December 1997.

# 1995 Preservation Technology and Training Grants

1995 PTTGrants

## Training and Education

*These 1995 PTTGrants projects are administered by Frances Gale, NCPTT Training Coordinator.*

### 47. Preservation Skills Training

Historic Windsor, Inc., Windsor, Vermont

$40,000

The Preservation Institute for the Building Crafts of Historic Windsor, Inc. sponsored a series of hands-on workshops for professionals in the building crafts in April 1996. With PTTGrants funds remaining from this series, workshops on American building design and technology, preservation philosophy and classical moldings were conducted in April 1997 in New Orleans.

The two final workshops in this series are scheduled for Fall 1997: a repointing workshop at Hermann-Grima House in New Orleans in late September and a decorative finishes workshop at Magnolia Mound in Baton Rouge in early October.

### 48. Preserving Our Endangered Past

Slater Mill Historic Site, Pawtucket, Rhode Island

$19,813

A series of workshops on the preservation and conservation of buildings, textiles, furniture, photographs and paper was conducted at Slater Mill Historic Site in Spring 1996. Aimed at museum professionals, volunteers and owners of historic properties, the workshops offered low-tech and low-cost solutions to a variety of preservation problems.

### 49. A Multimedia Approach to Training Staff in Simple Book Repair

Baker Library Preservation Committee, Dartmouth College, Hanover, New Hampshire

$6,290

The Preservation Services Department of Dartmouth College Library converted its training manual on book repair into hypertext, making it accessible via World Wide Web. *Simple Book Repair Manual* provides text and photo illustrations of ten basic repairs including book cleaning and erasing pencil marks, torn pages, hinge repair, hinge tightening and binding a single signature pamphlet.

The manual is available at <http://www.dartmouth.edu/~preserve/tofc.html>. Dartmouth College Library staff as well as anyone with access to the Internet can visit the World Wide Web site to view training materials and book conservation resources. The project promotes an understanding of simple book repair techniques and is an important resource in collections conservation.

### 50. Diagnosing Moisture in Historic Buildings

The Friends of Meridian Hill, Washington, DC

$40,000

Diagnosing Moisture in Historic Buildings was held in Washington, DC in May 1996. The symposium focused on diagnosing sources of moisture in historic buildings including ground moisture, moisture penetrating building envelopes and moisture generated inside the building generally as a result of climate control systems. In addition to hands-on demonstrations of technical instruments used for diagnosing and monitoring moisture, workshop participants visited historic sites to observe instrumentation in place.

### 51. Training for Instructor's Certificate in the Building Trades

Historic Preservation Program, University of Vermont, Burlington, Vermont

$33,401

Preservation Education Skills for Building Trades Teachers was a week-long pilot course conducted at the Historic Preservation Summer Institute in July 1996. The course explored methods for integrating hands-on building conservation and historic preservation instruction into building trades curricula. The pilot course helped to develop a better understanding of the potential of instructional programs in historic preservation for building trades instructors.

### 52. A Training Video: Lead-Based Paint Abatement in Historic Structures

Maryland State Historic Preservation Office, Crownsville, Maryland

$19,560

Maryland SHPOffice is producing a training video for historic property owners, preservation craftspeople, contractors and historic site maintenance personnel on appropriate removal and abatement techniques for lead-based paint. The video, which will be available in early Fall 1997, will help translate OSHA and EPA regulations into work practices on preservation projects.

### 53. Culture Shock: Fire Protection for Historic and Cultural Property

Boston University, Boston, Massachusetts

$40,000

Boston University produced a 22-minute video [NCPTT Publications No. 95-01] on fire protection for historic properties that demonstrates the vulnerability of historic structures to fire and provides a general description of the use of fire protection and detection devices. *Culture Shock* is available upon request to NCPTT and, in the United Kingdom, through the Fire Protection Association, the UK's national fire safety organization.

### 54. American Indian Voices in Preservation Training

Crow Canyon Archaeological Center, Cortez, Colorado

$19,320

Working with PTTGrants recipient Crow Canyon Archeological Center, the University of Nevada, Reno conducted a workshop in August 1996 to consider the training needs of Indian tribes in historic preservation. Dr. Thomas F. King, adjunct member of the UNR faculty, facilitated the workshop and prepared the project report [NCPTT Publications No. 96-11].

### 55. A Regional Seminar in Landscaping for Historic Properties

Southern Cultural Heritage Foundation, Vicksburg, Mississippi

$6,850

The Southern Cultural Heritage Foundation's seminar, Landscaping to Support Historic Sites, was conducted in Vicksburg in Spring 1996. Using funds remaining from the grant, the Foundation conducted a second workshop in May 1997. The workshop focused on planning, implementing and maintaining appropriate landscapes for historic properties. Session topics included landscape history, integrating contemporary landscape needs in historic settings, historic and native plants and restoring historic gardens.

### 56. Three-Dimensional Coordinate Measurement of Historic Artifacts

Mystic Seaport Museum Inc., Mystic, Connecticut

$23,821

This project, undertaken by Mystic Seaport Museum in collaboration with the MIT Museum and the Smithsonian Institution, adapted three-dimensional coordinate measurement technology to document vessel half-models in their collections. The Coordinate Measuring Machine that was purchased with grant funds is now on loan to the US Naval Museum. An article on the project will be published in *CRM*.

### 57. Investing in the Past: Informed Decision Making for Historic Preservation in the Private Sector

Wilkinson County Museum, Woodville, Mississippi

$19,833

The Wilkinson County Museum conducted a one-day seminar on preservation methodologies and strategies for historic property owners in September 1996, in Woodville. The curriculum included conservation treatments, environmental monitoring, long-range financial strategies and information about where and when to get help. Site visits served as case studies for these topics.

### 58. Youth Training in Vernacular Earthen Architecture and Associated Cultural Traditions

Cornerstones Community Partnerships, Santa Fe, New Mexico

$39,268

Cornerstones Community Partnerships developed a curriculum for earthen architecture preservation training that included associated cultural traditions. Native American and Hispanic youth spent several weeks during the Summer of 1996 learning about vernacular buildings in New Mexico — how to create them and how to preserve them. An article on the project will be published in *CRM*.

### 59. Preservation Training for Local Governments

Georgia Department of Archives and History, Atlanta, Georgia

$40,000

The Georgia Department of Archives and History held six day-long workshops for local records personnel seeking additional training in preservation. Topics of the workshops included evaluating options for the preservation of paper-based and machine-readable records, maintaining a suitable records storage environment, selecting an off-site facility for storing records, disaster preparedness, and reformatting records for more efficient management. Leaflets on workshop topics now are available through GDAH or via the Georgia Secretary of State-GDAH home page, <http://www.sos.state.ga.us>.

### 60. Heritage Landscape

Morgan County Landmarks Society, Madison, Georgia

$6,937

For this project, Morgan County Landmarks Society researched historic gardens of Morgan County in primary sources at Morgan County Archives, Madisonian Archives, and the Georgia state archives. The resulting supplement to the Morgan County Heritage Education Teacher's Manual is nearing completion.

### 61. Construction Technology Manual for Historic Buildings in Puerto Rico and the Caribbean

Caribbean Heritage, San Juan, Puerto Rico

$34,830

Caribbean Heritage is developing a manual for professionals in the construction industry in the Caribbean who lack formal training in preservation. The manual will explain preservation and conservation concepts in a pragmatic way using illustrations and case studies from Puerto Rico and the Caribbean. The manual will be published following peer review.

## Research

## 1995 PTTGrants

*These 1995 PTTGrants projects are administered by Dr. Mark Gilberg, NCPTT Research Coordinator.*

### 62. Investigating the Use of Silicones for the Treatment of Wet or Waterlogged Organic Materials

Nautical Archaeology Program, Texas A&M University, College Station, Texas

$39,641

Project completed, final report in preparation.

### 63. Investigating the Use of Turn-of-the-Century Whitewares as Economic Indicators for Evaluating Sites for National Register Eligibility

Ohio Historic Society, Ohio State Historic Preservation Office, Columbus, Ohio

$10,394

Project results published to date —

Manson, L. and D.M. Snyder. *Evaluating Sites with Late Nineteenth and Early Twentieth Century Components for Eligibility in the National Register of Historic Places: Using Turn of the Century Whitewares as Economic Indicators in Assessing Collections and Developing Contexts.* PTTGrant No. MT-2405-NC-019. NCPTT, Natchitoches, Louisiana (1996). [NCPTT Publications No. 96-10]

——. "Evaluating Sites with Late Nineteenth and Early Twentieth Century Components for Eligibility in the National Register of Historic Places: Using Turn of the Century Whitewares as Economic Indicators in Assessing Collections and Developing Contexts", paper to be presented at the 1997 Annual Meeting of the Society for American Archaeology, Nashville, Tennessee.

——. "Evaluating Sites with Late Nineteenth and Early Twentieth Century Components for Eligibility in the National Register of Historic Places: Using Turn of the Century Whitewares as Economic Indicators in Assessing Collections and Developing Contexts". *Journal of Historical Archaeology* (submitted for publication).

### 64. Investigating Relationships between Heritage Preservation and Economic Development in Rural Areas Using the Bayou Teche Heritage Corridor as a Model

Office of Community Preservation, Louisiana State University, Baton Rouge, Louisiana

$39,978

Project results published to date —

Kennedy, C.B. <http://www.lhin.lsu.edu/>.

——. "Historic Preservation Online: The Louisiana Heritage InfoNet-Part 1". *Preservation in Print* 24 (1997) 10-11.

### 65. Field Testing Remote Sensing Systems for the Protection of Historic and Prehistoric Sites and Monuments from Vandalism

Preservation Science and Technology Unit, University of California, Riverside, California

$40,000

Project completed, final report in preparation.

### 66. Researching the Use of Oral Histories to Interpret African-American Theaters in the South

City of Macon, Georgia

$39,988

Project completed, final report in preparation.

### 67. Designing Protective Coating Systems for Outdoor Bronze Sculpture and Ornamentation

National Gallery of Art, Washington, DC

$37,500

Project results published to date —

Brostoff, L., and R. De La Rie. *Research into Protective Coating Systems for Outdoor Bronze Sculpture and Ornamentation.* Interagency

Agreement No. 1443MO00197-0219. NCPTT, Natchitoches, Louisiana (1997). [NCPTT Publications No. 97-03]

——. "Conservation Treatments: Methods, Options and Research", paper presented at *The Conservation of Outdoor and Indoor Sculpture and Monuments*, Brookgreen Gardens, Murrells Inlet, South Carolina, August 21-23, 1997.

### 68. Developing Agent-Based Computer Simulations for Identifying and Interpreting Archeological Sites

Washington State University, Pullman, Washington

$35,463

Project results published to date —

Kohler, T: "The richness of the world", *Universe*, Spring 1997, 2-6.

### 69. Evaluating the Impact of Revegetation on the Preservation of Archeological Sites

Center for Archaeological Site Stabilization, University of Mississippi, University, Mississippi

$20,000

Project completed; final report in preparation.

### 70. Preparing a Directory of Chemical Spot Tests for Materials Characterization

University of Arizona, Arizona State Museum, Tucson, Arizona

$28,310

Project results published to date —

Odegaard, N. "Chemical spot tests for materials characterization", paper presented at 24th Annual Meeting of the American Institute for Conservation, Norfolk, Virginia, June 10-16, 1996.

——, W. Zimmt, S. Carroll, and D. Spurgeon. *A Directory of Spot Tests for Materials Conservation*. PTTGrants No. MT-0424-5-NC-022. NCPTT, Natchitoches, Louisiana (1997). [NCPTT Publications No. 97-04]

### 71. Analyzing the Effect of an Indoor Pollutant on Traditional Easel Paintings

Indiana University Art Museum, Indiana University, Bloomington, Indiana

$30,815

Project in progress; anticipated completion Fall 1997.

### 72. Investigating the Biogeochemical Relationship between Prehistoric Rock Paints and Natural Rock Accretions

Newberry College, Newberry, North Carolina

$29,070

Project in progress; anticipated completion Fall 1997; project results published to date —

Russ, J. "The feasibility of dating Lower Pecos rock art by means of biogenic crusts", paper presented at the 1996 Annual Meeting of the Society for American Archaeology, New Orleans, Louisiana.

——. "Origin of the Whewellite-rich rock crust in the Lower Pecos region of Southwest Texas and its significance to Paleoclimate reconstructions", *Quaternary Research* 46 (1996) 27-36.

### 73. Analyzing the Economic Impact of Historic Preservation in our Nation's Most Densely Populated State

New Jersey Historic Trust, Trenton, New Jersey

$40,000

Project results published to date —

Listokin, D., and M. Lahr. *Economic Impacts of Historic Preservation*. PTTGrants No. MT-0424-5-NC-017. Natchitoches, Louisiana (1997) [NCPTT Publications No. 97-05]

—— (Center for Urban Policy Research, Rutgers-The State University of New Jersey). *Economic Impacts of Historic Preservation*. Task Force on New Jersey History, Trenton, New Jersey, vol. III (1997).

### 74. Documenting the Movement of Historic Objects Using Advanced Computer Simulation Technologies

National Preservation Institute, Washington, DC

$36,000

Project results published to date —

Otto, L., and J. Massey. *The Application of Advanced Computer Simulation and Visualization Technology to Enhance Cultural Resources Documentation* (video). PTTGrants No. MT-0424-5-NC-015. Natchitoches, Louisiana (1997). [NCPTT Publications No. 97-06]

Massey, J.C., and F.M. Robinette. "Adapting digital technology used in ship design to cultural resources", *CRM* 19 (1996) 31-32.

### 75. Developing a Conservation Inventory of Frank Lloyd Wright Structures

Frank Lloyd Wright Building Conservancy, River Forest, Illinois

$30,000

Project results published to date —

DeLong, D. "Conserving the legacy of Frank Lloyd Wright"; *Frank Lloyd Wright Conservancy Newsletter* (submitted for publication).

### 76. Field Testing a Non-Invasive, Non-Toxic Baiting System for Protecting Historic Structures from Subterranean Termites

Fort Lauderdale Research and Education Center, University of Florida, Fort Lauderdale, Florida

$40,000

Project in progress; anticipated completion Fall 1997; project results published to date —

Su, N.-Y. "A new method to protect historic buildings and structures form subterranean termites", *CRM* (in press).

### 77. Designing a Controlled Archeological Test Site for Evaluating Non-Invasive Technologies for Archeological Site Assessment

Tri-Services Cultural Resources Research Center, US Army Construction Engineering Research Laboratories, Champaign, Illinois

$37,250

Project in progress; anticipated completion 1997; project results published to date —

Isaacson, J. "Building an Archaeological Site: The Champaign Facility for Testing Non-Invasive Techniques in Archaeology, Phase 1", paper presented at International Symposium on Archaeometry, 1996.

1994 PTTGrants

## Training and Education

*These 1994 PTTGrants projects are administered by Frances Gale, NCPTT Training Coordinator.*

### 78. Conducting a Native Americans and Archeology Workshop

Arizona Archaeological Council, Kykotsmovi, Arizona

$6,740

Transcripts of workshop proceedings are available upon request to Frances Gale.

### 79. Conducting Workshops for Methods of Archeological Site Discovery and Evaluation

Society for American Archaeology, Washington, DC; Archeological Assistance Division, National Park Service, Washington, DC

$39,600

The workshops were held May 1995 at SAA's annual meeting in Minneapolis. SAA has prepared reading lists and lesson plans for similar workshops, which are available upon request to Frances Gale.

### 80. A Training Video — *Connections: Preserving America's Landscape Legacy*

American Society of Landscape Architects, Washington, DC

$20,000

The video, *Connections: Preserving America's Landscape Legacy* [NCPTT Publications No. 96-02], was produced by the Garden Conservancy and the National Park Service. *Connections* premiered in Fall 1996 in Chicago and Los Angeles at annual meetings of the National Trust for Historic Preservation and ASLA. Spring 1997 showings of the video were held in Washington, Boston, Chicago, Atlanta, and Los Angeles. The video shows the irreplaceable legacy of significant cultural landscapes including parks, gardens, battlefields and cemeteries. In *The New York Times*, reviewer Anne Raver wrote, "I think that it should be in every public library and school in the country because it captures, through images and stories, the importance of the land and why we need to preserve it."

### 81. Designing an Interactive Multimedia Training Program for Advanced Mapping Technologies

Bureau of Land Management, US Department of the Interior, Phoenix, Arizona

$40,000

Project completion is delayed.

### 82. Preserving Historic Public Works Projects

American Public Works Association, Kansas City, Missouri

$39,200

Working with the Institute for the History of Technology and Industrial Archeology at West Virginia University, APWA has developed a guide for public works officials that contains information about managing and maintaining historic public works buildings and engineering structures. The guide is now in press. A continuing education workshop using the guide as a resource document is planned for Fall 1997.

### 83. Editing proceedings of The Uses of Garden Archaeology Conference Held in London, England in Summer 1995

US Committee/International Council on Monuments and Sites, Washington, DC

$7,500

Project results published to date —

Jacques, D., ed. "The Techniques and Uses of Garden Archaeology: Papers from an ICOMOS/English Heritage conference", *Journal of Garden History*, vol. 7, no. 1 (1997).

1994 PTTGrants

## Research

*These 1994 PTTGrants projects are administered by Dr. Mark Gilberg, NCPTT Research Coordinator.*

### 84. Developing a Low-Cost Photogrammetric Data Archival System

Center for Advanced Spatial Technologies, University of Arkansas, Fayetteville, Arkansas

$37,428

Project results published to date —

Gaigre, A., E.S. Cooper, and Y. Yuan. "Softcopy photogrammetry applied to the archiving of archaeological artifacts", *Proceedings of the ASPRS/ACSM Annual Convention and Exhibition, American Society for Photogrammetry and Remote Sensing*, vol. 1 (1996) 501-511.

——, and F.W. Limp. *Development and Implementation of a Rapid, Low Cost Photogrammetric Data Archival System for Artifact and Osteological Inventory*. PTTGrant No. MT-0424-4-NC-22. NCPTT, Natchitoches, Louisiana. (1996). [NCPTT Publications No. 96-05]

Cooper, E.S., and A. Gaigre. "Recording material culture: A low cost photogrammetric technique", paper presented at the 53rd Annual Plains Anthropology Conference, Laramie, Wyoming.

——, and Y. Yuan. "Recording material culture: A low cost photogrammetric technique", paper presented at 61st Annual Meeting of the Society for American Archaeology, 1996, New Orleans.

### 85. Developing Guidelines for Allowable Temperature Fluctuations in Museums and Historic Properties

Conservation Analytical Laboratory, Smithsonian Institution, Washington, DC

$39,779

Project results published to date —

Mecklenberg, M. "Fiber composites in infrastructure", *Proceedings of the First International Conference on Composites in Infrastructure*, edited by H. Saadatmanesh and M.R. Ehsani, University of Arizona, Tucson, 1996.

——. "Technical considerations for the transport of panel paintings", *Symposium on the Structural Conservation of Panel Paintings* (in press).

### 86. Investigating the Effectiveness of Protective Glazing for Historic Stained Glass Windows

Inspired Partnerships, Chicago, Illinois

$37,254

Project results published to date —

Anon. "The history of protective glazing", *Stained Glass*, 92 (1996) 306-316.

——. "Protective glazing for stained glass windows", *Stained Glass* 91 (1996) 186-187, 226-235.

——. "Stained glass protection — Is it really worth it?", *Amazing Space* 3 (1997).

——. "Through a glaze darkly — Congregations don't see many savings", *Comfort & Light Newsletter* 59 (Summer 1995) 2.

Krueger, B., N.A. Vogel, R. Achilles, A.J. Femenella, R. Pieper, A. Rudin, S. Reilly, and W. Simon. *Protective Glazing*, PTTGrant No. MT-0424-4-NC-15, NCPTT, Natchitoches, Louisiana (1996). [NCPTT Publications No. 96-06]

Rudin, A., and L. Spielvogel. "Modeling the energy performance of glazing systems over stained glass", *Heating, Piping and Air Conditioning* (submitted for publication).

Vogel, N.A. "Higher standards needed for protective glazing", *Traditional Building* 10 (1997) 80, 130.

——. "Protective and destructive glazing systems over stained glass", paper presented at *Windows Conference and Exposition for Historic Buildings II*, February 19-21, 1997, Washington, DC.

——. "Protective glazing for stained glass: Who needs it?", paper presented at APT Annual Meeting, November 17-18, 1995, Washington, DC.

### 87. Developing Efficient Techniques for Analyzing Blood Residues on Tools from Archeological Sites

Conservation Analytical Laboratory, Smithsonian Institution, Washington, DC

$39,779

Project completed; final report in preparation; project work was presented at symposium entitled "Residue analysis: How you can do it and how much it will cost", at the 61st annual meeting of the Society for American Archaeology, 1996, New Orleans.

### 88. Developing Methods and Technologies for Preserving Woody Plants in Historic Landscapes

Arnold Arboretum, Harvard University, Cambridge, Massachusetts

$40,000

Project in progress; anticipated completion Fall 1997.

### 89. Investigating Improvements of Existing Heating and Air Conditioning Systems in Historic Structures

New York State Office of Parks and Recreation and Historic Preservation, Waterford, New York

$40,000

Project in progress; anticipated completion December 1997.

### 90. Investigating the Preservation of Historic Carved Sandstone Buildings in Marine Environments

Historic Preservation Commission, Monterey, California

$31,925

Project results published to date —

Preusser, F., E.E. Kimbro, A. Crosby, J. Twilley, C.A. Simpson-Smith, R. Edwards, and J. Nolan. *Deterioration and Preservation of Porous Stone, Royal Presidio Chapel, Monterey, California*, PTTGrant No. MT-0424-4-NC-14, NCPTT, Natchitoches, Louisiana, 1996. [NCPTT Publications No. 96-04]

Twilley, J., and F. Preusser. "Siliceous shale deterioration in the facade of the Royal Presidio Chapel, Monterey, California", paper presented at *5th International Conference on Non-Destructive Testing, Analytical Methods and Environmental Evaluation for the Study and Conservation of Works of Art*, Budapest, Hungary, September 1996.

### 91. Developing a Database for the Study of 20th Century Building Materials

National Council for Preservation Education, c/o Michael Tomlan, Cornell University, Ithaca, New York

$40,000

Project completed.

### 92. Testing the Energy Performance of Historic Windows in Cold Climates

State of Vermont Division of Historic Preservation, Montpelier, Vermont

$40,000

Project results published to date —

Shapiro, A. "Historic windows: Renovate or replace? Energy considerations", *APT Bulletin* (submitted for publication).

——. "Retain or retire? A field study of energy impacts of window rehab choices", paper presented at *Windows Conference and Exposition for Historic Buildings II*, February 19-21, 1997, Washington, DC.

——, S. Flanders, and D. Hemenway. *Testing the Energy Performance of Wood Windows in Cold Climates, A Report to The State of Vermont Division for Historic Preservation, Agency of Commerce and Community Development*, PTTGrant No. MT-0424-4-NC-25, NCPTT, Natchitoches, Louisiana, (1996). [NCPTT Publications No. 96-08]

# Our Mission

**United States Department of the Interior**
*As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally-owned public lands and natural and cultural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife and biological diversity; preserving the environment and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen responsibility in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under US Administration.*

**National Park Service**
*The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education and inspiration of this and future generations. The Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.*

**National Center for Preservation Technology and Training**
*The National Center for Preservation Technology and Training promotes and enhances the preservation of prehistoric and historic resources in the United States for present and future generations through the advancement and dissemination of preservation technology and training.*

*NCPTT, created by Congress, is an interdisciplinary effort by the National Park Service to advance the art, craft, and science of historic preservation in the fields of archeology, historic architecture, historic landscapes, objects and materials conservation, and interpretation. NCPTT serves public and private practitioners through research, education, and information management.*

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